

SCIENCE

And Technology Program



Dave King and Darrell Dyke

FY 1999 - FY 2001

Reclamation currently uses technology developed in the 1960s by the Natural Resources Conservation Service (formerly Soil Conservation Service), called the Type I Analysis, to define acres that receive less than ideal diversion requirements (shortage acres) within the Colorado River Basin. In addition, existing methods are usually independent of the eventual use of the results, necessitating considerable duplication of effort. This project will develop methods to compute shortages and naturalized flows that will be used with the RiverWare river system modeling framework.

The goal of this research proposal is two fold: (1) to develop new methodology/technology that can be used to evaluate river basin water shortages, whether at the site specific level or the watershed level, and (2) to develop new technology which would allow users to simulate naturalized flows using either a "water rights" based model or a more traditional "black box" model. The objective is to develop methodologies that can be readily reproduced, and are more objective and reliable.

It was determined that additional functionality was needed in RiverWare's rules controller (developed in the Watershed and River Systems Management Program) to support computation of shortages using rules. RiverWare developer CADSWES was contracted to implement the required functionality. The basic requirement is that rules should be able to compute expected shortage for a given water supply. This will enable the user to write rules that can reliably predict shortages and avoid multiple iterations.

Phase 1 study results will not be known until the new RiverWare functionality is available and implemented in the rules. The San Juan River Basin will be used as a test case for preliminary assessments of the new rule functionality in FY 2000. This work will be conducted in partnership with the San Juan Recovery Implementation Program. The program will be an immediate beneficiary of the study. Phase 2 work will not commence until FY 2001.

The San Juan River Basin of Colorado, Utah, Arizona, and New Mexico is being used to test methods and procedures. Personnel and funds from the Western Colorado Area Office, Southern Division, Durango, Colorado, are involved.

A paper or poster session will be provided to Reclamation's annual River Systems Management Workshop upon completion of the study.